

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-016869**Date Inspected:** 21-Sep-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girders**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

- A). Field Splice E6/E7
- B). OBG E1, Erection Access Hole, Insert Plate
- C). Ventilation Access Hole, Insert Plate

A). Field Splice E6/E7

The QAI also observed the Ultrasonic Testing (UT) of the Complete Joint Penetration (CJP) groover weld on the deck plate field splice identified as WN: 6E-7E-A, Segments A1 through A5. The testing was performed by the QC technicians Steve McConnell and Tom Pasqualone utilizing a G.E./Krautkramer USM 35X. The examination of the groove weld was conducted utilizing UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 and the contract documents. The technicians performed the required longitudinal wave technique, utilizing a 25.4mm diameter transducer, to perform the examination for base metal soundness and the shear wave technique for the examination of weld soundness which was performed utilizing a 16mm x 19mm rectangular transducer.

The QAI observed the Shielded Metal Arc Welding (SMAW) process of the edge plate field splice identified as Weld Number (WN): 6E-7E-F1. The welding was performed by Yao Xin Liang ID-7238 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1110A, Rev. 1. The WPS was also used by the Quality Control (QC) Inspector John Pagliero to verify the Direct Current Electrode Positive (DCEP) welding parameters and to

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monitor the Complete Joint Penetration (CJP) welding. The QAI observed the QC inspector verifying the welding parameters and were noted as 130 amps. The minimum preheat temperature of 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with contract documents. The welding was performed in the vertical (3G) position with the work placed in an approximately vertical plane with the groove approximately vertical.

B). OBG E1, Erection Access Hole Insert Plate

The QAI observed the Shielded Metal Arc Welding (SMAW) of the erection access hole insert plate identified as Weld Number (WN): 1E-PP8.5-E4-W4 on the "A" deck of the Orthotropic Box Girder (OBG) E1. The welding was performed by Jin Pei Wang ID-7299 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1110-B, Rev. 1. The welding was performed in the overhead (OH) position on the "B" side of the Complete Joint Penetration (CJP) groove joint. The WPS was also utilized by the QC inspector John Pagliero as a reference to monitor the welding and verify the Direct Current Electrode Positive (DCEP) welding parameters which was recorded as 137 amps by the QC inspector. The 3.2 mm Lincoln electrode was utilized with the welding performed in the overhead (4G) position with the work placed in an approximately horizontal plane and the weld metal deposited from the bottom side. The groove joint appeared to comply with the AWS joint designation identified as B-U4a. The minimum preheat temperature of 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were verified by the QC inspector.

The QAI also observed the Magnetic Particle Testing (MPT) of the back grinding on the "B" side of the weld joint. The testing was performed by Salvador Moreno utilizing a Parker Contour Probe identified as a DA-400 unit. The application and evaluation of the testing appeared to comply with the procedure identified as SE-MT-CT-D1. 5-101 Rev. 4. No rejectable indications were noted by the QC technician and the testing was performed prior to the welding of the "B" side of the weld joint.

C). Ventilation Access Hole Insert Plate

The QAI observed the back grinding on the "A" side of the weld joint identified as 3E-PP19-E5-L3E-NW. At the conclusion of the grinding, the QC technician Tom Pasqualone performed the Magnetic Particle Testing (MPT) of the ground surface. At the conclusion of the testing, the QAI observed that no rejectable indications were noted by the QC technician. No welding was performed on this weld joint during this shift.

QA Observation and Verification Summary

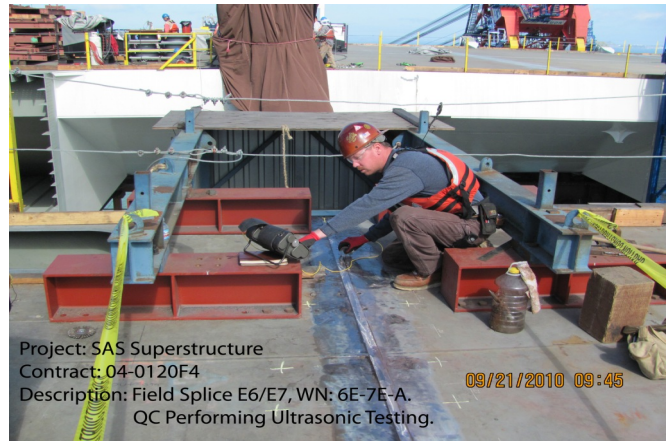
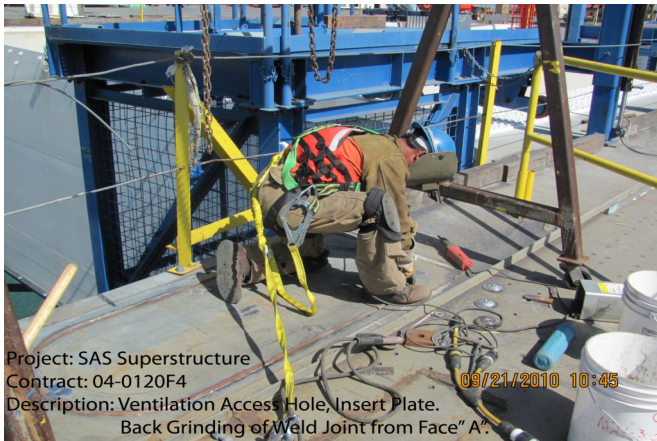
The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the SMAW process appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

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The QAI was notified by, Rick Bettencourt, regarding the planar misalignment issue at the field splice identified as 6E-7E-C had been resolved and Paul Jefferson had verbally issued the approval for the CJP welding of this joint which will also incorporate a transition slope of 2.5 to 1 on the faces of the joint. This condition occurs at Segment C1, Y coordinate = 0mm to 170mm and at Segment C2, Y coordinate = 4697mm to 5275mm.

The digital photographs below illustrate the work observed during this scheduled shift.



Summary of Conversations:

There were general conversations with Quality Control Inspector Bonifacio Daquinag, Jr. at the start of the shift regarding the location of American Bridge/Fluor welding, inspection and N.D.E. testing personnel scheduled for this shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes, Danny	Quality Assurance Inspector
Reviewed By:	Levell, Bill	QA Reviewer
